Space Weather Forecast

Issued on Friday, 14 June 2024 at 12:12 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

---

Space Weather Forecast Headline: Chance of Minor Geomagnetic storm Day 2 (15 Jun). Isolated Moderate flares (R1-R2 radio blackouts) likely throughout.
Analysis of Space Weather Activity over past 24 hours

Solar Activity: Solar activity was Moderate, with two isolated Moderate class flares, one at 13/1645 UTC and another at 14/0432 UTC. The first was attributed to a fairly small but moderately magnetic region in the southeast. There are currently 8 sunspot regions on the visible disc. The largest and most significant region is situated in the southeast disc and was responsible for the second Moderate flare. This region is large and magnetically complex and continues to develop in size and complexity. Two other regions, both in the eastern hemisphere, have also developed slightly. The other regions are relatively small and simple.
No Earth directed Coronal Mass Ejections (CME's) were observed during the period.
Solar Wind / Geomagnetic Activity: Solar winds were indicative of a slow regime. The speed was slow-ambient and generally stable, varying between 300-360 km/s. The IMF (Interplanetary Magnetic Field) was weak throughout. Until 14/0240 UTC it was relatively stable before increasing slightly. The important north-south component fluctuated weakly initially, but since 14/0240 UTC has remained predominantly southward. Geomagnetic activity was Quiet (Kp 0-2).
Energetic Particles / Solar Radiation: The high energy (greater than 10 MeV) proton flux has remained below the S1/Minor storm threshold, with a decreasing trend returning to background levels around 12/1120 UTC.

Four-Day Space Weather Forecast Summary
Solar Activity: Further isolated Moderate class flares are likely, with just a slight chance of Strong flares. Any significant flares most likely from the two larger and more complex regions in the southeast. No new regions are expected to rotate onto the visible disc during the period.
Solar Wind / Geomagnetic Activity: A faint Coronal Mass Ejection (CME) associated with a Moderate flare at 12/2246 UTC is now expected to have an Earth directed component, possibly reaching Earth later on Day 2 (15 Jun). Confidence is low regarding the arrival time and impact with G1/Minor Geomagnetic storm intervals (Kp 5) anticipated.

A weak enhancement from a coronal hole feature, almost centre disc, may connect to Earth on Day 3 (16 Jun) with solar winds increasing to slightly elevated levels 450-500 km/s. There is the possibility of a few Unsettled or possibly Active (Kp 3-4) geomagnetic intervals upon arrival of this stream of fast winds.

Overall geomagnetic activity is expected to remain Quiet (Kp 0-2) through Day 1 (14 Jun) and the start of Day 2 (15 Jun) before increasing upon arrival of the forecast CME to Active or G1 (Kp 4-5), with a slight chance of reaching Moderate/G2 (Kp 6). Geomagnetic levels then decline to Quiet to Unsettled (Kp 2-3) for the remainder of the period with a chance of isolated Active (Kp 4) intervals associated with coronal hole enhancement.

Energetic Particles / Solar Radiation: High energy proton flux is expected to continue to decline over the coming days, remaining below the S1/Minor storm levels. The chance of enhancement continues to decline.

Issued by Met Office Space Weather Advisor, Tel: +44 (0) 330 135 4254 Email: moswoc@metoffice.gov.uk

© Crown Copyright 2024. All Rights Reserved.

Met Office

Space Weather Forecast

Geomagnetic Storms:

Geo-Magnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	10	50	10	10
Strong	G3	No	1	1	5	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 M Class	Yes	50	50	60	60
Very Active	R3 to R5 X	No	5	5	5	5

Solar Radiation Storms - (High Energy Protons):

Radiation Storms Probability (Exceedance)	Level (cm^{-2} sr^{-1} s^{-1})	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	10	5	5	5
Very Active	≥ S3 *	No	1	1	1	1

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)

Issued by Met Office Space Weather Advisor, Tel: +44 (0) 330 135 4254 Email: moswoc@metoffice.gov.uk

© Crown Copyright 2024. All Rights Reserved.